The Engineering Experiment Station

Part III. Growth and Purpose

By D. B. CHANCELLOR, '30

One Hundred Thousand ($100,000) Dollars is a large sum, but that is estimated as the amount saved the City of Columbus by use of a method tried at the Engineering Experiment Station. Here is the third of Mr. Chancellor's articles about this interesting division whose work touches all departments of the College of Engineering and whose service extends to all the industries and citizens of Ohio.—Editor.

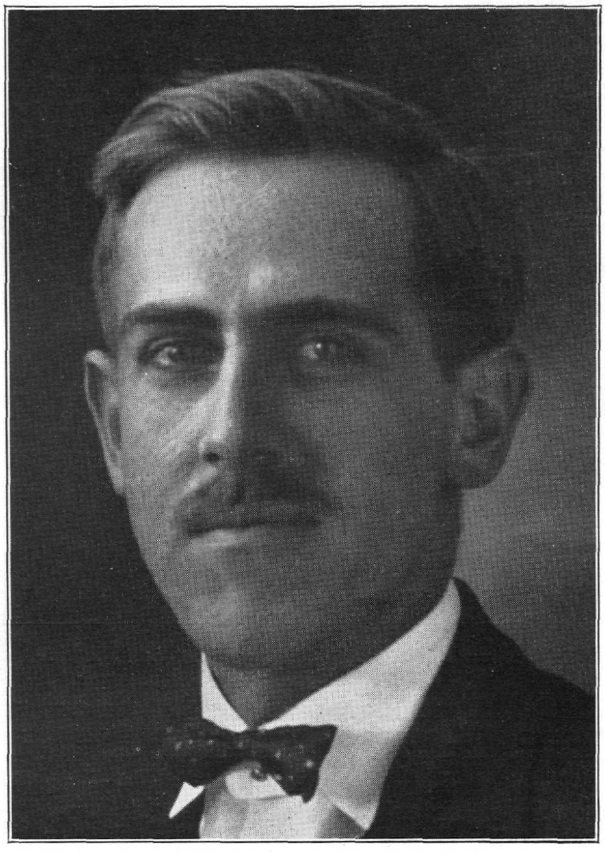
In the January issue we looked at the exterior and interior of the Engineering Experiment Station, and paid particular attention to the large testing machines which were being calibrated at that time. No pictures of the calibration were available, but for this month's issue one has been obtained from Mr. Harry D. Foster, the research engineer who had charge of the work. The calibration, by the way, was very successful, and showed the machines to be less than one percent in error. Mr. Foster, who is a member of the class of 1920, became associated with the Station last July, when the increased appropriation of the State Legislature made possible a larger organization. But that's getting ahead of the story. Here is the history of the Engineering Experiment Station from the beginning.

The Engineering Experiment Station of Ohio State University was authorized by a bill passed by the State Legislature in 1913. Since the Legislature failed to appropriate any money until 1915, however, the Station was not fully organized until that time. In 1915, President W. O. Thompson appointed an acting director and an advisory council of six members from the Engineering College Faculty. The Legislature appropriated $2,000 for use among the departments carrying on research in the years 1915 and 1916, but there was no regular appropriation until 1919, when $20,000 was assigned to the Station for the biennium. This amount was appropriated biennially until 1927, when the appropriation was increased to $25,000 per year.

Up to 1919, 17 bulletins were published by the Engineering Experiment Station, the publication being made possible by small appropriations from the University and by the hard work of the teachers responsible for the projects. Of these first publications, Bulletin No. 8, "Stresses in Tall Buildings," by Cyrus A. Melick, has been most in demand, and calls for it are still coming from all over the world, although the bulletin has long been out of print. Mr. Melick, who was holder of the Robinson Fellowship from 1909 to 1911, received his Doctor of Civil Engineering degree in 1911, and is now bridge engineer of the Michigan State Highway Department.

From 1919 to 1926, the Station issued 16 bulletins and 13 circulars. The circulars are publications containing valuable matter quite foreign to that obtained in investigation, matter which is of general interest and free from technical data.

Since last July four bulletins have been published, making available the results of research in lime, the operation of steam boilers, polarized alternating current electro-magnets, and the use of gunite and concrete encasements to increase the strength of structural steel. To give just one instance of the value of this research work, the tests of gunite-encased beams at the Engineering Experiment Station are responsible for the method of repairing the North High Street Viaduct at the Union Station in Columbus, repair which is perhaps $100,000 cheaper than replacement, and which may be carried on entirely without interruption of traffic.



HARRY D. FOSTER

Chief Investigator at the Engineering Experiment Station

Some of the subjects in which research projects are now being carried on are "The Slippage of Belting," "Vibration of Crankshafts," "The Curing of Concrete Pavements," "The Bearing Power of Soils," and "The Flow of Concrete." Ohio is the greatest producer of ceramic products in the country, and a number of the projects have to do with the manufacturing, marketing and use of the products of this very important industry. A major part of the Station equipment is the experimental gas plant, the retort of which holds a charge of one ton of coal. Professor Demorest's

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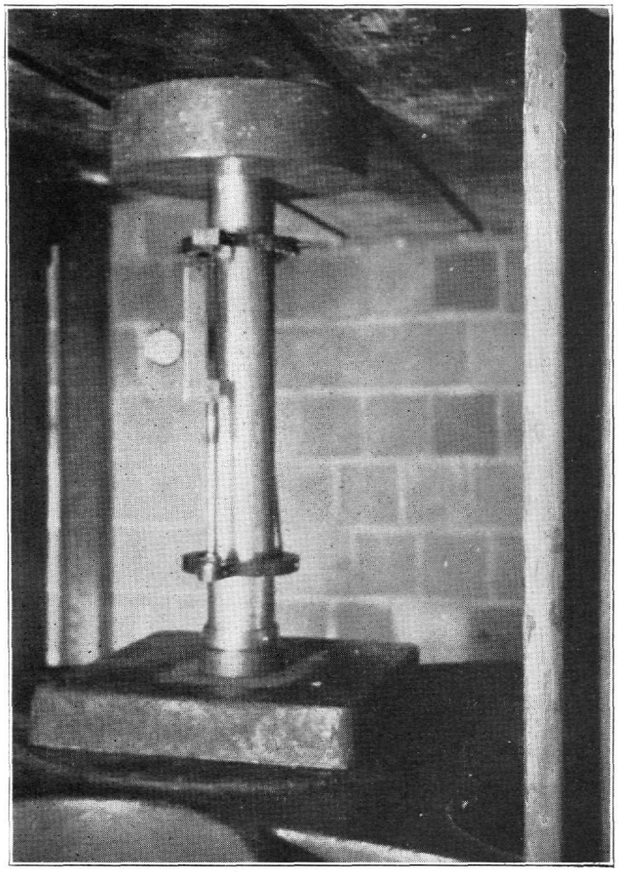

Calibration Bar in 1,000,000-Pound Testing Machine

work on the gasification of coals is known thruout the world. The results of a number of these researches are nearly ready for publication.

The increased annual appropriation has made possible a larger organization, beginning with July, 1927. The Director of the Station is Dean E. A. Hitchcock of the College of Engineering. Prof. George A. Bole, formerly in charge of the U. S. Bureau of Mines Ceramic Experiment Station and later Research Professor in the Department of Ceramic Engineering, was added to the Station staff as Research Professor of Ceramic Engineering. Prof. Frank H. Eno, who has for several years been conducting research work on the bearing power of soils, has been made Research Professor of Civil Engineering. John M. Weed, formerly Instructor of English, is Assistant to Director Hitchcock. Harry D. Foster, who for seven years was Research Associate in the Bureau of Standards at Washington, D. C., came to the Engineering Experiment Station as Research Engineer, conducting experiments on ceramic products. Edward L. Harcourt, Cer. Eng. '26, is in charge of the construction of the Roseville Experimental Brick Plant.

With its present organization and facilities the Engineering Experiment Station is in a position to render to the people and industries of the state very valuable assistance in the solution of their Engineering problems.

Irate wife: "All my troubles began when I married you."

Hubby: "Please leave the children out of the argument, dear."